

**VIRGINIA  
STANDARDS OF LEARNING ASSESSMENTS**

**Spring 2003 Released Test**

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**GRADE 5  
SCIENCE**

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**Science**

**DIRECTIONS**

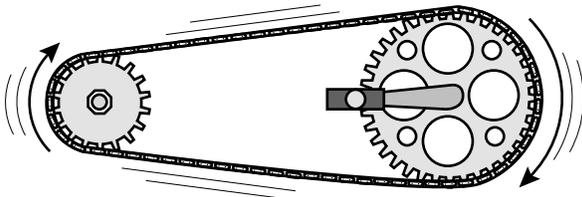
Read each question carefully and choose the best answer.

**SAMPLE**

**When the Earth is seen from outer space, it looks mainly blue. This is because most of the Earth is covered with —**

- A ice
- B mountains
- C oceans
- D deserts

1



**Which form of energy is best shown in this picture?**

- A Mechanical
- B Electrical
- C Chemical
- D Nuclear

**2 Which of these increases as a submarine dives deeper into the ocean?**

- F The number of plants in the water
- G The freshness of the water
- H The water temperature
- J The water pressure

**3 Which of the following changes is possible with the addition of heat?**

- A Liquid water changes to ice.
- B Water vapor changes to ice.
- C Water vapor changes to liquid water.
- D Ice changes to liquid water.

**4 The time between today's sunrise and tomorrow's sunrise would be about —**

- F 12 hours
- G 24 hours
- H 36 hours
- J 48 hours

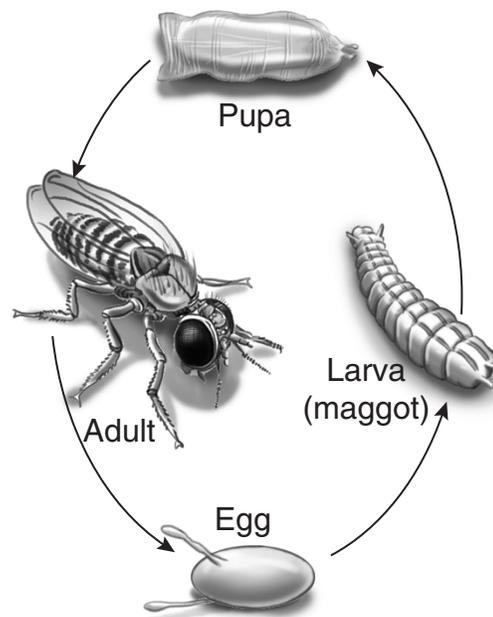
5 **Distance Thrown by Students**

Student	Distance Thrown (m)
1	15
2	75
3	10
4	16
5	8

Dennis conducted an experiment to determine which of his classmates could throw a ball the farthest. He recorded his results in the above table. Which student's measurement is an *unusual* result?

- A 1
- B 2
- C 4
- D 5

6



The diagram shows the life cycle of a fruit fly. During the larva stage, *most* of the organism's time is spent —

- F laying eggs
- G eating
- H resting
- J growing wings

7 **Geologists learn what organisms were like in the past by studying —**

- A minerals
- B water
- C fossils
- D atmosphere

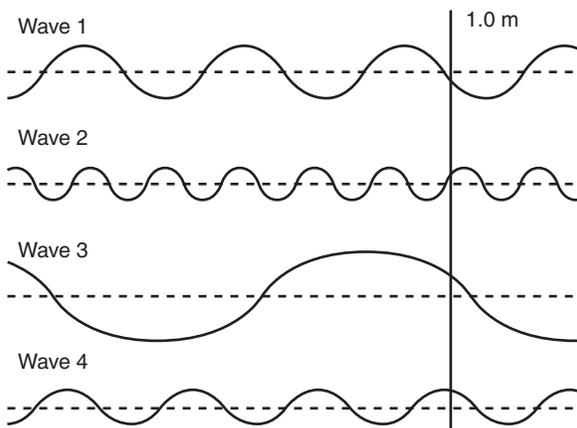
8



This landform was probably caused by —

- F high tides
- G wind
- H human activity
- J running water

9

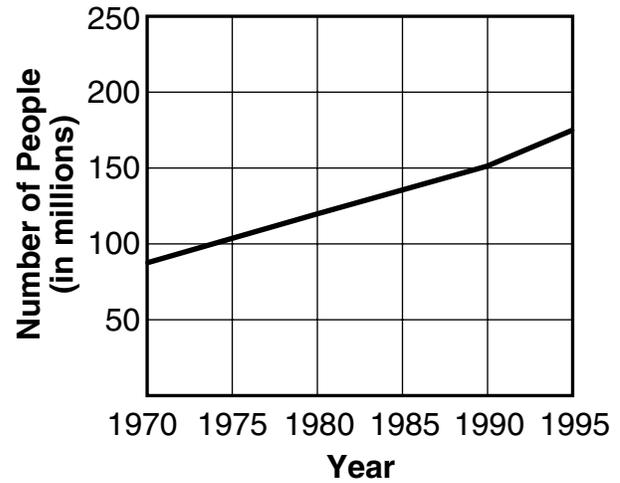


Which of the above waves has the *longest* wavelength?

- A Wave #1
- B Wave #2
- C Wave #3
- D Wave #4

10

**Population of Brazil  
1970-1995**



From the chart shown above, you can predict that for the year 2000, Brazil's population will —

- F show a heavy drop
- G be a flat line even with 1995
- H have topped 250 million
- J continue its steady rise

11



Usually, cumulonimbus clouds are associated with weather that is —

- A dry
- B stormy
- C fair
- D foggy

12 A strip of land is cleared of trees and bushes to make space for a power line. What impact might this have on birds living in the area?

- F The natural enemies of birds will be eliminated.
- G Weather conditions may change.
- H The rate of erosion will decrease.
- J There will be less food and shelter.

13 Two students wanted to find out which of their toy race cars would go the farthest. They let each car roll down a ramp and then measured how far the cars rolled. Which of these should be held constant if they want a fair test of their cars?

- A The height of the ramp
- B The weight of the ramp
- C The length of the cars
- D The shape of the cars

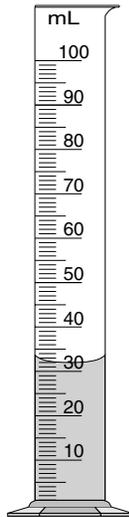
14 A person will see a flash of lightning before they hear the thunder that goes with it because —

- F the eye is quicker than the ear
- G the thunder occurs much later than the lightning
- H sound travels faster through the atmosphere than light
- J light travels faster through the atmosphere than sound

15 What material would be safest to use as an insulator to cover electrical wires?

- A Aluminum
- B Tin
- C Rubber
- D Water

16



If 5 milliliters of vinegar are added to the water in the cylinder, what will be the total volume of the liquid?

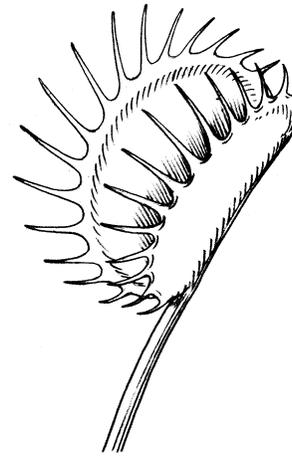
- F 30 milliliters
- G 27 milliliters
- H 37 milliliters
- J 35 milliliters

17 A Virginia natural resource important to the state's economy, as well as a primary source of energy, is —

- A oil
- B steel
- C coal
- D limestone

18

Venus's Flytrap



The picture shows a Venus's flytrap. This unusual organism can trap flies with its leaves, but it gets most of its food from photosynthesis. To what kingdom does this organism belong?

- F Monera
- G Protista
- H Fungi
- J Plantae

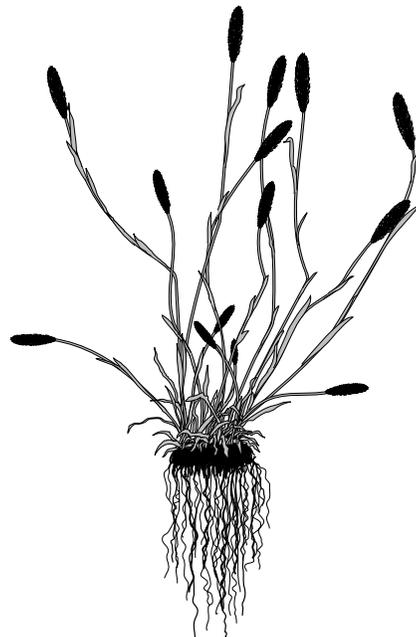
19



**Benjamin Franklin conducted this famous experiment that showed lightning was —**

- A a movement of air molecules
- B a magnetic field
- C an electrical discharge
- D a glowing chemical

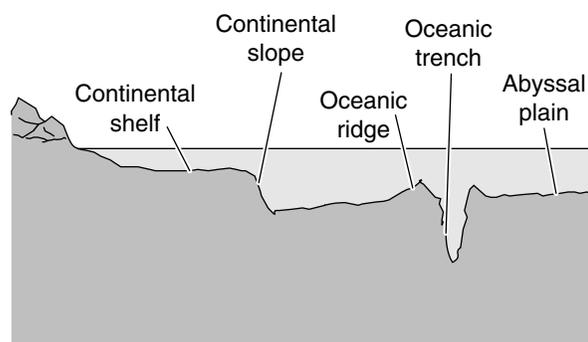
20



**Which of these is a *main* function of this plant's roots?**

- F Making seeds
- G Producing pollen
- H Absorbing nutrients
- J Storing chlorophyll

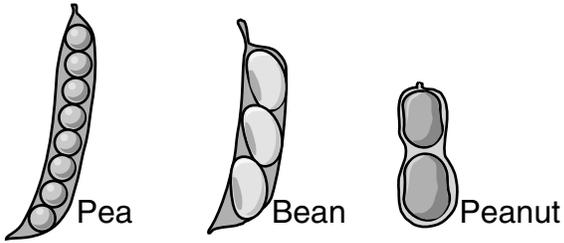
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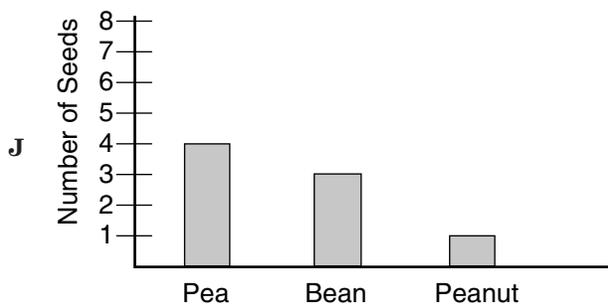
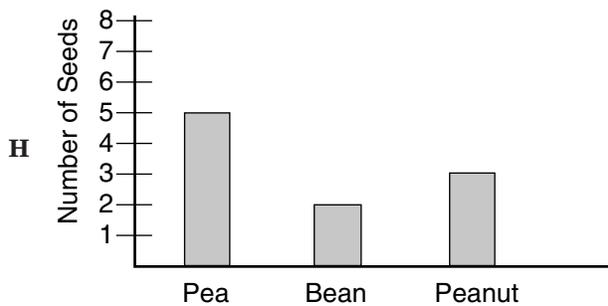
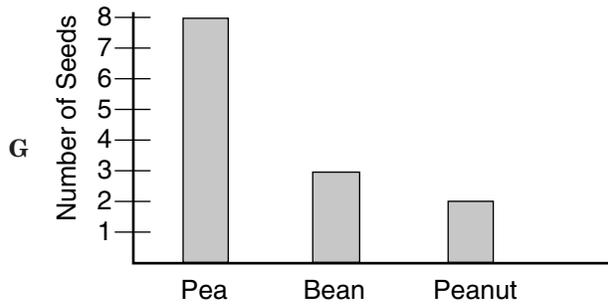
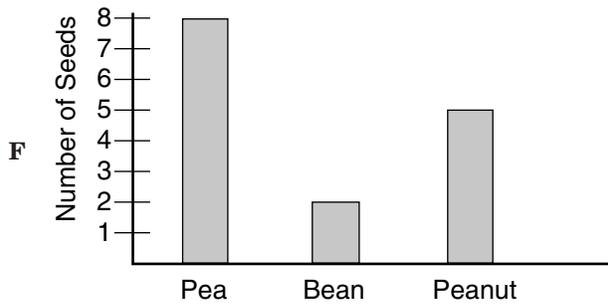
**Algae and other producers need lots of sunlight. Most ocean algae would be found in the water —**

- A on the abyssal plain
- B in the oceanic trench
- C above the continental shelf
- D beside the continental slope

22



The picture above shows some different kinds of seed pods. Which graph correctly shows the number of seeds in each pod?



23 In plant cells, chloroplasts —

- A act as the cell's control center
- B enable plant cells to produce their own food
- C allow materials to move into and out of the cell
- D support and protect the cell

24 Which of these Earth layers is the thinnest?

- F The inner core
- G The outer core
- H The mantle
- J The crust

25 What do ferns have that apple trees do not have?

- A Stems
- B Roots
- C Flowers
- D Spores

26

**Bean Seed Growth**

Temperature (°C)	Days to Germinate
25	5
20	7
15	9
10	11
5	?

The chart shows the time it took for bean seeds to germinate at different temperatures. If the trend continues, at a temperature of 5°C the seeds probably will germinate in —

- F 5 days
- G 8 days
- H 13 days
- J 16 days

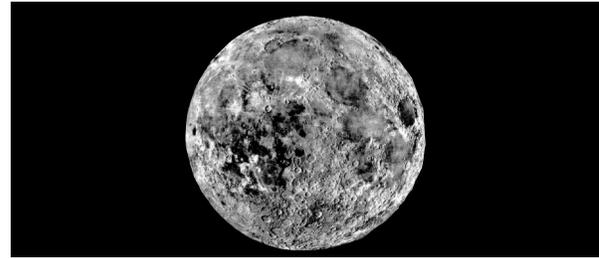
27 Redwood trees can grow to be very tall. They can grow so tall because they are —

- A vascular
- B deciduous
- C nonvascular
- D flowering

28 Which of the following sea animals would be classified as an invertebrate?

- F Sea horse
- G Squid
- H Shark
- J Seal

29



Which of these can be observed in this picture?

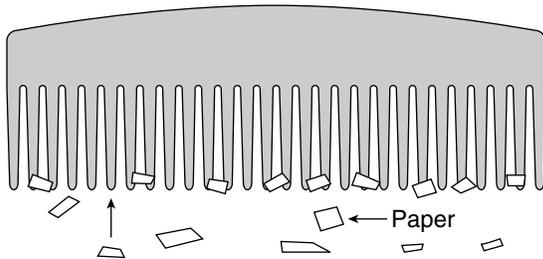
- A The moon is circular.
- B The moon spins around on its axis.
- C The moon is solid rock.
- D The moon has little air.

30 The distance between which of these is the shortest?

- F Earth and sun
- G Moon and sun
- H Earth and Mars
- J Earth and moon

- 31 By passing white light through a prism, you can tell —
- A that white light is actually a mixture of different colors
  - B the mass of the prism
  - C the original source of the light
  - D that blue light is brighter than white light

32



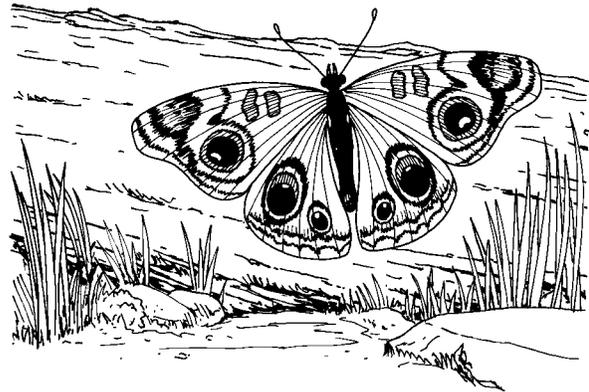
The picture shows a comb that was used on a cold, dry day. Which of these cause the bits of paper to be attracted to the comb?

- F Magnetic forces
- G Chemical reactions
- H Static electricity
- J Heat differences

- 33 Which of the following would be useful in locating a sunken ship at the bottom of the ocean?

- A Sonar
- B Lasers
- C Morse code
- D Telescope

34



The eyespots on this butterfly's wings allow it to —

- F stay warm
- G locate nectar-filled flowers
- H fly away quickly
- J frighten or confuse enemies

35

<b>START HERE</b> Does the creature have a round head? (go to 1)	<b>1</b> Does the creature have one big eye? (go to 3) Does the creature have two eyes? (go to 4)	<b>3</b> The creature is a Woznat.
		<b>4</b> The creature is a Zapoom.
Does the creature have a square head? (go to 2)	<b>2</b> Does the creature have horns? (go to 5) Does the creature have no horns? (go to 6)	<b>5</b> The creature is a Nanner.
		<b>6</b> The creature is an Ock.



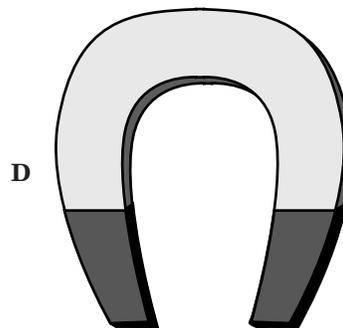
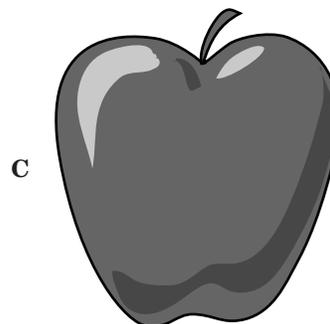
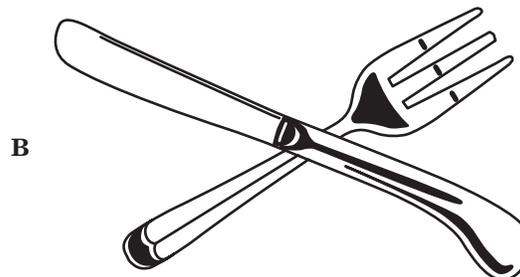
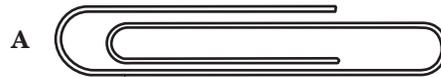
According to the identification key, what type of creature is creature Y?

- A Woznat
- B Zapoom
- C Nanner
- D Ock

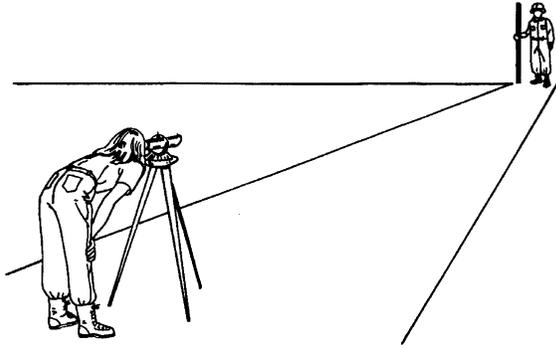
36 The *smallest* part of matter that is identifiable as an element is the —

- F atom
- G molecule
- H cell
- J compound

37 Which item below would have a mass closest to that of a thumbtack?



38



**This surveyor is measuring the distance of a road. The most appropriate units to measure this distance are —**

- F millimeters
- G centimeters
- H decimeters
- J meters

**39 The Earth is very different from other planets in the solar system because it has the most —**

- A solid rock
- B volcanoes
- C liquid water
- D high winds

**40 Which of these natural resources is a source of lumber for home building?**

- F Ores
- G Coal
- H Trees
- J Grasses

## Answer Key

<b>Test Sequence</b>	<b>Correct Response</b>	<b>Reporting Category</b>	<b>Reporting Category Description</b>
1	A	016	Force, Motion, Energy, and Matter
2	J	018	Earth/Space Systems and Cycles
3	D	016	Force, Motion, Energy, and Matter
4	G	018	Earth/Space Systems and Cycles
5	B	015	Scientific Investigation
6	G	017	Life Processes and Living Systems
7	C	018	Earth/Space Systems and Cycles
8	G	018	Earth/Space Systems and Cycles
9	C	016	Force, Motion, Energy, and Matter
10	J	015	Scientific Investigation
11	B	018	Earth/Space Systems and Cycles
12	J	017	Life Processes and Living Systems
13	A	015	Scientific Investigation
14	J	016	Force, Motion, Energy, and Matter
15	C	016	Force, Motion, Energy, and Matter
16	H	015	Scientific Investigation
17	C	018	Earth/Space Systems and Cycles
18	J	017	Life Processes and Living Systems
19	C	016	Force, Motion, Energy, and Matter
20	H	017	Life Processes and Living Systems
21	C	018	Earth/Space Systems and Cycles
22	G	015	Scientific Investigation
23	B	017	Life Processes and Living Systems
24	J	018	Earth/Space Systems and Cycles
25	D	017	Life Processes and Living Systems
26	H	015	Scientific Investigation
27	A	017	Life Processes and Living Systems
28	G	017	Life Processes and Living Systems
29	A	015	Scientific Investigation
30	J	018	Earth/Space Systems and Cycles
31	A	016	Force, Motion, Energy, and Matter
32	H	016	Force, Motion, Energy, and Matter
33	A	016	Force, Motion, Energy, and Matter
34	J	017	Life Processes and Living Systems
35	B	015	Scientific Investigation
36	F	016	Force, Motion, Energy, and Matter
37	A	015	Scientific Investigation
38	J	015	Scientific Investigation
39	C	018	Earth/Space Systems and Cycles
40	H	017	Life Processes and Living Systems